In the Abstract:

Please amend the Abstract of the Disclosure in accordance with Annexure 2, attached hereto, showing the amendments to the Abstract.

REMARKS

Amendments are presented herein to improve the form of the subject application and in response to the Examiner's comments in the above-identified Office Action.

Claim Rejections - 35 U.S.C. § 103(a)

CLAIMS 23-27

Claims 23-27 stand rejected under 35 U.S.C. 103(a) as specifying subject matter deemed by the Examiner to be obvious over U.K. Patent No. 1,104.669 ("UK '669 ") in view of German Patent 3,432,681 ("German Patent '681")further taken with "My Laser Cutting Experiences" (from website http://www.inlay.com/cnc/laser/index.html).

According to the Examiner, the UK '669 reference taught a process of marquetry which included the steps of cutting a plurality of veneers with identical cut lines therein. Following the cutting step, the Examiner asserts that the reference taught that one skilled In the art would have interchanged the cut pieces from the various colored pieces of wood in order to form an inlaid decorative veneer assembly. In addition, the Examiner states that the reference taught that one skilled in the art would have attached the plural panel to a substrate in order to form the decorative panel. The Examiner concedes that the UK '669 reference failed to teach that those skilled in the art would have incorporated a laser step in the cutting operation (the reference performed the cutting with a die

press arrangement). The Examiner further concedes that the reference additionally fails to teach that the graphic data was disposed in a computer to control the cutting operation of the veneers.

The reference to German Patent '681 is considered by the Examiner to suggest that those skilled in the art would have machined a veneer in the formation of an inlaid assembly in the craft of marquetry by laser cutting the veneers. The reference, according to the Examiner, expressly states (see the abstract of the disclosure) that the use of the laser cutting arrangement would have eliminated the large amounts of labor involved in the marquetry operation and greatly reduced the time to manufacture the inlaid assembly. According to the Examiner, by doing the same, one skilled in the art would have understood that there would have been greater productivity in the process of making the inlaid assemblies. The foregoing notwithstanding, the Examiner concedes that the German Patent '681 reference does not expressly state that the machining operation via the laser is computer controlled.

The Examiner continues by stating that, as expressed by "My Laser Cutting Experience," one practicing the art of laser cutting was well aware of the use of a computer to facilitate the laser cutting operation wherein one employed a drawing program like Corel® or AutoCAD® in order to create a graphical representation of the desired inlay assembly followed by the use of the computer to control the laser in the cutting operation. The Examiner believes that this would have improved the productivity of the operation of making the inlaid. The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques "My Laser Cutting Experience" and German Patent '681 in order to improve the efficiency of the operation of making an inlaid panel in accordance with the UK '669 reference.

With respect to claim 24, the Examiner notes that one skilled in the art of veneers would have understood that the various veneers would have been finished prior to the cutting operation as the

method of the UK '669 reference merely cut the veneers and assembled the various colored veneers together. In addition, the Examiner asserts that to provide a desired color (dye) to the veneer prior to the cutting operation would have been obvious, as it was desirable to provide various colored pieces to be assembled together and the dying of veneers is taken as conventional in the art.

With respect to claim 25, the Examiner notes that the "My Laser Cutting Experience" reference suggests that one skilled in the art would have incorporated a raster laser operation in the cutting of the same and one skilled in the art would have understood that the use of the laser would have removed material via etching. With respect to claim 26, the Examiner notes that the references suggests that the veneers would have been inlaid one within the other. With respect to claim 27, the Examiner notes that the "My Laser Cutting Experience" reference suggests that a CAD system would have been used in the operation.

APPLICANT'S REMARKS

The UK '669 reference describes a knife cut system wherein the identical picture is cut in four sheets of different colors and/or grains, with the same tool. The tool is specified to be thin so as not to remove any material. The picture portions thus cut-out are interchanged (mix and match) to form four of the same picture, but wherein the various portions are of correspondingly different color and/or grain. The Examiner correctly states that this reference fails to teach or suggest that those skilled in the art would have incorporated a laser step in the cutting operation, since the reference teaches that the cutting is performed with a die press arrangement, or that the graphic data is disposed in a computer to control the cutting operation of the veneers.

The marquetry concept disclosed in the UK '669 reference is admitted in the Background portion of the specification of the present patent application. See, for example, Paragraph [0008] of the present specification which states that:

> [0008] Inlays have been incorporated into the construction of furniture and the decorative arts for centuries. Typical inlay applications vary widely and encompass many different materials and methods- from stone plaque with an embedded metal design, to table tops constructed with die-cut veneer of differing wood species assembled jig-saw puzzle style and bonded to a substrate. However, while inlays themselves vary widely, there are significant difficulties in the art and industry of creating inlay panels. One such difficulty is that the industry is labor intensive and requires a high degree of skill from the artisan. Consequently, the resulting product is correspondingly expensive. In addition, cutting both the positive and negative images required by an inlay is tedious. (Emphasis Added)

There is no mention of any computerized methodology in the UK '669 reference, as noted by the Examiner.

The German Patent '681 reference is written in the German language and thereof is not entirely understandable to Applicant. Nevertheless, from the English language "Basic Abstract" therein provided it is understood that the reference describes a system of marquetry wherein veneer components are cut from one or more veneer sheets with the use of laser beam. The English language "Basic Abstract" goes on to say that the laser beam can be focused at the cutting point to provide a 0.15 mm wide cut.

It is respectfully asserted that persons of skill in the art would not combine the teachings of the German Patent '681 reference with the teachings of the UK '669 reference. First, of course, there is the matter that the German Patent '681 reference provides no teaching therein that would lead a person of skill in the art to the combination of that reference with the UK '669 reference. More specifically, the practitioners of the system disclosed in the UK '669 reference clearly endeavor to achieve a close fit between the cut out elements. This is evident from page 1, line 82 to page 2,

line 7, which states in relevant pert that the cutting is achieved "cleanly without removal of any material."

In contradistinction to the teaching in UK '669 reference, the methodology used in the German Patent '681 reference removes material during the cutting operation. Such cutting, as noted, can remove 0.15 mm of material, and as such, would be entirely unacceptable for the mix and match process of the UK '669 reference. Although it can be conceded that, as noted by the Examiner, the system of the German Patent '681 reference will save labor, the cost for the labor reduction is unacceptable wastage of material during cutting, and unacceptably loose fit of the cut outs. Accordingly, there is no incentive provided in the German Patent '681 reference to combine the laser approach therein described with the high precision methodology of the UK '669 reference.

In view of the foregoing, it is respectfully asserted that independent method claim 23 is allowable over the combination of prior art references applied by the Examiner. The foregoing notwithstanding, Applicant has, without prejudice and in an effort to expedite prosecution of this case, amended independent method claim 23 to specify subject matter that is not taught or suggest by any combination of the applied reference. More specifically, independent method claim 23 now specifies that the step of entering into a control computer graphical data serves to form machine code coordinates that correspond to a plurality of laser cutting paths. In addition, the independent method claim also specifies that prior to the step of second laser cutting a panel in accordance with the graphical data to produce a plurality of panel portions, there is provided the newly added step of readjusting the machine code coordinates. The readjustment of the machine code coordinates permits, *inter alia*, the accommodation of the laser cutting width whereby the panel portions are dimensioned with high precision to fit into the cuts in the pane formed during the step of first laser

cutting. Nothing in any of the references of record even suggests this aspect of the claimed invention.

The amendments to the claims do not constitute new matter in the present case. In this regard, the Examiner's attention is respectfully directed to independent method claim 1 (now canceled) which specifies the subject matter introduced by the present amendment into independent method claim 23. All of this material is amply supported in the specification, and will not require any additional search or consideration by the Examiner.

Accordingly, it is respectfully asserted that independent method claim 23 is allowable on multiple grounds over the applied references of prior art. Dependent method claim 24, which is also subject to this rejection by the Examiner, depends from dependent method claim 23 and therefore contains all of the limitations therein. Accordingly, this claim is also believed to be in allowable condition.

As to dependent method claims 25-27. the Examiner applies the "My Laser Cutting Experience" reference against claim 25, asserting that one skilled in the art would have incorporated a raster laser operation in the cutting of the same and one skilled in the art would have understood that the use of the laser would have removed material via etching. As to claim 26, the Examiner notes that the references suggests that the veneers would have been inlaid one within the other, and with respect to to claim 27, the Examiner notes that the "My Laser Cutting Experience" reference suggests that a CAD system would have been used in the operation.

Nothing in the "My Laser Cutting Experience" reference suggests the subject matter of independent method claim 23. Moreover, claims 25-27 all depend from dependent method claim

23 and therefore contain all of the limitations therein. Accordingly, these claims are also believed to be in allowable condition.

In view of the foregoing, it is respectfully asserted that the Examiner's rejection of claims 23-27 under 35 U.S.C. § 103(a) has been overcome, and accordingly, claims 23-27 are allowable.

CLAIMS 1-22

Claims 1-22 stand rejected under 35 U.S.C. 103(a) as specifying subject matter deemed by the Examiner to be obvious over Russian Federation (RU) Patent Abstract 211127 ("RU '127")(available from Derwent) or German Patent 3,432,581 in view of either one of Shilling or Sorko-Ram further taken with the Matheson, *et al.* reference optionally further in view of United States Patent No. 5,817,243 (Shaffer) or "My Laser Cutting Experiences" (from website http://www.inlay.com/cnc/laser/index.htm) dated February 15, 2001).

The Examiner states that the RU '127 reference suggested that it was known at the time the invention was made to form an inlay by laser cutting a sheet of material to form an inlay component and a panel substrate receptive to the inlay component and inserting the inlay component formed from the cutting operation into the opening of the main panel. The reference stated, according to the Examiner, that the base layer and the inlay shape can be different thicknesses and that they could be fastened to a backing layer. The Examiner concedes, however that the RU '127 reference did not state that the fastening would have included bonding the inlay component and the base component to the substrate. The Examiner continues by asserting that the reference to German Patent '681 suggested that it was known to laser cut a veneer and then inlay additional components which were laser cut in the openings of the first veneer in order to provide an appropriate design. The veneers were attached to a substrate in the operation. The Examiner concedes that there is no scanning of the

image one desired to reproduce nor is there any indication that a computer would have been used in the laser cutting operation.

The Examiner applied the Schilling, *et al.* reference as suggesting that in an inlaying operation wherein laser cutting was performed to cut the inlay piece as well as the base followed by insertion of the inlay in the opening in the base, it was known at the time the invention was made to utilize a computer to control the cutting operation. According to the Examiner, Applicant is more specifically referred to column 6, line 37-column 7, line 57. The reference is asserted by the Examiner to suggest that the desired design would have been stored on a computer and that the cutting operation would have been regulated as a function of the stored data by the computer. The reference is additionally considered by the Examiner to be to suggest that the cutting would have been performed with a laser cutting mechanism. Likewise, the Examiner states that the reference to Sorko-Ram suggested that those skilled in the art would have utilized a numerically controlled laser cutter to cut a base material as well as an inlay material with a laser cutter followed by insertion of the inlay into the base and bonding of the inlay and base to a backing material. The applicant is more specifically referred to column 1, lines 25-46 and column 1, lines 58-39. The Examiner concedes that the references were silent as to the scanning of an image into the computer in order to provide the desired design. The Examiner notes that the Sorko-Ram reference suggested that one skilled in the art would have translated the information regarding the desired pattern into a set of instructions for operating the numerically controlled laser cutter (where clearly such translation involved feeding the information to a computer for translation of the information into code useful for the inlaying operation).

The Examiner states that the Matheson, *et al.* reference suggested in the art of inlaying that one skilled in the art would have scanned an original art into the computer and utilized this scanned

data to control the laser cutting operation in the manufacture of an inlaid wood panel. The reference additionally suggested that the fastening of the components together would have entailed the bonding of the components together. It should be also noted that the references to the Schilling, *et al.* reference or Sorko-Ram suggested that the inlay and the substrate material would have been joined together. Additionally, note that the Matheson, *et al.* reference suggested that the inlaying operation would have been suitable for wood materials in the manufacture of panels while the Schilling, *et al.* reference is concerned with carpet inlaying, the reference to Sorko-Ram is concerned with plastics and the RU '127 reference is concerned with plastic or metal materials, it should additionally be noted that the Matheson, *et al.* reference additionally clearly recited that there was a cleaning step which was performed wherein the pixels (machine code) on the edges were smoothed utilizing a software program. It should be noted that this clean up could additionally include alterations, see column 5, lines 26-27, for example. Applicant is advised by the Examiner that the processing performed by Applicant which requires the adjusting of the machine code and for readjusting of the machine code was nothing more than the clean up of the image to ensure that the pieces would have matched in the inlay without gapping therein, see paragraph [0046] of the disclosure. Note that the reference clearly taught that the adjusted or readjusted image was what was used by the system in the laser cutting wherein the image was printed and read by an optical scanner which was connected to the laser cutting device. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the claimed operation could be practiced on any of the above noted materials to obtain the desired decorative effects on wished. It would have been obvious to one of ordinary skill in the art at the time the invention was made to scan an original artwork for inlaying the same wherein the information was scanned into a computer and then used in a computer aided design operation to manufacture an inlay via laser cutting as suggested by the Matheson, *et al.*

reference wherein the laser cutting operation would have been performed to completely cut out the inlay as well as the base so that the inlay was able to be disposed in the base as suggested by either one of the RU '127 reference or German Patent '681 and where it was known to utilize a computer to control the cutting operation during inlaying to completely cut through the materials as suggested by the Schilling, *et al.* reference or Sorko-Ram. It being noted that adjustment or readjustment of the image forming data was taken as conventional in the art of computer aided design previously which has never been challenged by applicant.

With respect to claim 2, the Examiner notes the Matheson, *et al.* reference suggested that inlaying to produce a table top was known in the prior art and one skilled in the art would have understood that such would have entailed incorporation of the panel into a piece of furniture. Regarding claim 3, the references taught the step of readjusting the machine code therein as discussed by the Matheson, *et al.* reference. Regarding claim 4, note that the RU '127 reference suggested that those skilled in the art would have bonded the materials to a backing (fastened) and that bonding was a well known means for fastening as suggested by the Schilling, *et al.* reference and the Matheson, *et al.* reference. the Examiner additionally notes that German Patent '681 suggested this type of bonding operation on a backing. Regarding claim 5, note that the references suggested the formation of an inlaid panel and that it is taken as well known and conventional to apply a decorative edging to the same in order to finish the assembly. Regarding claims 6 and 7, one skilled in the art at the time the invention was made would have understood that in the manufacture of a piece of furniture a structural support would have been attached to the decorative inlay and such is taken as conventional in the art as is the application of additional decorative elements to the inlaid panel (depending upon the desired design one wished to attain one skilled in the art would have known to provide an additional decorative piece to the inlay panel). Regarding claim 8, note that the

Matheson, *et al.* reference suggested the scanning of the master. Regarding claims 9-15, 17 and 18, applicant is advised that the Matheson, *et al.* reference suggested the proposed arrangement for the use of the computer whereby computer aided design was used to obtain coded information of an original and the coded information was then used to control the cutting operation in the laser cutting process. The particulars of the computer processing are taken as conventional in the art. Regarding claims 16, 19 and 20, the prior art recited in the RU '127 reference suggested that one would have fastened the cut pieces to a backing. Likewise the references to German Patent '681 suggested bonding the material to a backing. The use of adhesive to secure the inlay components together was known as evidenced by Shilling, Sorko-Ram and the Matheson, *et al.* reference. Regarding claims 21 and 22, the staining or a wood panel as well as the sealing of the same is taken as conventional in the art of finished a decorative panel and one skilled in the art of inlaying would have been expected to utilize the same.

While it is believed by the Examiner that the prior art appears to suggest al of the features employed in the laser cutter including the numeric control of the same with the identified software useful for controlling the transfer of the information from a design which is printable to one which is useful for numerically controlling a laser, the references to the Shaffer reference or "My Laser Cutting Experiences" both taught that a laser printer and/or cutter would have known how to read machine code from a computer in order to facilitate the operation of the laser in the manner desired. More specifically, the Examiner asserts that the Shaffer reference at column 2, line 60 to column 3, line 52 suggested that the information of the image was converted from CAD code to code usable by the laser system (numeric code for the system for example). The reference to "My Laser Cutting Experiences," according to the Examiner, again expressed that a laser cutting system was capable of reading code directly from a drawing program like AutoCAD® or Corel®. As such, the laser

cutter, according to the Examiner, would have been capable of reading the code directly in the system of the Matheson, *et al.* reference (without the need for the optical scanner). The Examiner continues by stating that it would have been obvious to one of ordinary skill in the art at the time the invention was made to scan an original artwork for inlaying the same wherein the information was scanned into a computer and then used in a computer aided design operation to manufacture an inlay via laser cutting as suggested by the Matheson, *et al.* reference wherein the laser cutter was capable of reading the image information and subsequently performing the laser cutting function directly without the use of an optical scanner as suggested by either one of Shatter or "My Laser Cutting Experiences" wherein the laser cutting operation would have been performed to completely cut out the inlay as well as the base so that the inlay was able to be disposed in the base as suggested by either one of the RU '127 reference or German Patent '681 and where it was known to utilize a computer to control the cutting operation during inlaying to completely cut through the materials as suggested by the Schilling, *et al.* reference or Sorgo-Ram.

APPLICANT'S REMARKS

Claims 1-22 have been canceled without prejudice. These claims are duplicative of claims being prosecuted in the parent application, which is identified in paragraph [0003] of the present continuation-in-part patent application. It is noted that in view of the cancellation of claims, Applicant has not formulated herein any reply to the comments made by the Examiner relative to the rejection of claims 1-22 under 35 U.S.C. § 103(a) and make no admissions in regard thereof.

Accordingly, the Examiner's rejection of now canceled claims 1-22 under 35 U.S.C. 103(a) in this Office Action has been rendered moot.

Conclusion

In view of the foregoing, it is respectfully requested that the Examiner reconsider the present application, allow the claims, and pass the application for issue. If the Examiner believes that the prosecution of this case can be expedited by a telephone interview, the Examiner is requested to call attorney for Applicant(s) at the telephone number indicated hereinbelow.

Respectfully submitted,

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